

Appendix B.

Syntax Summary

Topic: Ignore

This appendix provides a syntax summary of reference items defined in the Component Name. There is a separate section for each item type (Scheme extension, test harness command, etc.), and the items within each section are alphabetized. Just the syntax of each item is given; refer to the item's reference template for a complete description.

Functions

Topic: Ignore

```
int DM_add_area_cstrn(int& rtn_err, DS_dmod* dmod, int tag_flag,
    int zone_flag, DS_zone* zone, void* src_data = NULL, int tag =
    -1, SDM_options* sdmo = NULL)
```

```
int DM_add_attractor(int& rtn_err, DS_dmod* dmod, int tag_flag,
    double* image_pt = NULL, int power = 2, double gain = 0.0, int
    tag = -1, SDM_options* sdmo = NULL)
```

```
int DM_add_crv_cstrn(int& rtn_err, DS_dmod* dmod, int tag_flag,
    DS_dmod* parent_dmod = NULL, int domain_flag = 0, DS_pfunc*
    src_C_pfunc = NULL, DS_pfunc* src_W_pfunc = NULL, DS_pfunc*
    src_Wn_pfunc = NULL, DS_pfunc* src_Wnn_pfunc = NULL, void(*
    src_CW_func)(void* src_data, double s, double* C, double* Cs,
    double* W, double* Wu, double* Wv, double* Wuw, double* Wuv,
    double* Wvv, double& dist2) = NULL, void* src_data = NULL,
    DS_CSTRN_SRC src_type = ds_user_cstrn, int behavior = (1 < 3),
    double tang_gain = 1.0, int tag = -1, SDM_options* sdmo =
    NULL)
```

```
int DM_add_crv_load(int& rtn_err, DS_dmod* dmod, int tag_flag,
    DS_dmod* parent_dmod = NULL, int domain_flag = 0, DS_pfunc*
    src_C_pfunc = NULL, DS_pfunc* src_W_pfunc = NULL, DS_pfunc*
    src_Wn_pfunc = NULL, DS_pfunc* src_Wnn_pfunc = NULL, void(*
    src_CW_func)(void* src_data, double s, double* C, double* Cs,
    double* W, double* Wu, double* Wv, double* Wuw, double* Wuv,
    double* Wvv, double& dist2)= NULL, void* src_data = NULL,
    DS_CSTRN_SRC src_type = ds_user_cstrn, int behavior =(1 < 3),
    double gain = 0.0, int tag = -1, SDM_options* sdmo = NULL)
```

```

int DM_add_crv_load(int& rtn_err, DS_dmod* dmod, int tag_flag,
    int domain_flag, DS_pfunc* src_C_pfunc, DS_pfunc* src_W_pfunc
    = NULL, double gain = 0.0, int tag = -1, SDM_options* sdmo =
    NULL)

int DM_add_curve_patch(int& rtn_err, DS_dmod* dmod, int
    domain_flag, double min, double max, int refinement, void*
    patch_entity, void* seam_data[], SDM_options* sdmo = NULL)

int DM_add_dist_press(int& rtn_err, DS_dmod* dmod, int tag_flag =
    1, int domain_flag = 1, double* domain_min = NULL, double*
    domain_max = NULL, double gain = 0.0, int negate_flag = 0, int
    tag = -1, SDM_options* sdmo = NULL)

int DM_add_link_C0_load(int& rtn_err, int& tag_shift, DS_dmod*
    dmod1, DS_dmod* dmod2, int domain_flag, DS_pfunc*
    src1_C_pfunc, DS_pfunc* src2_C_pfunc, DS_pfunc* src1_W_pfunc =
    NULL, DS_pfunc* src1_Wn_pfunc = NULL, DS_pfunc* src1_Wnn_pfunc
    = NULL, DS_pfunc* src2_W_pfunc = NULL, DS_pfunc* src2_Wn_pfunc
    = NULL, DS_pfunc* src2_Wnn_pfunc = NULL, void* src1_data =
    NULL, void* src2_data = NULL, void(* src_CW_func)(void*
    src_data, double s, double* C, double* Cs, double* W, double*
    Wu, double* Wv, double* Wuu, double* Wuv, double* Wvv, double&
    dist2) = NULL, double gain = 10000000., int tag = -1,
    DM_flipped_state flipped_state = DM_flip_unknown, SDM_options*
    sdmo = NULL)

int DM_add_link_C1_load(int& rtn_err, int& tag_shift, DS_dmod*
    dmod1, DS_dmod* dmod2, int domain_flag, DS_pfunc*
    src1_C_pfunc, DS_pfunc* src2_C_pfunc, DS_pfunc* src1_W_pfunc =
    NULL, DS_pfunc* src1_Wn_pfunc = NULL, DS_pfunc* src1_Wnn_pfunc
    = NULL, DS_pfunc* src2_W_pfunc = NULL, DS_pfunc* src2_Wn_pfunc
    = NULL, DS_pfunc* src2_Wnn_pfunc = NULL, void* src1_data =
    NULL, void* src2_data = NULL, void(* src_CW_func)(void*
    src_data, double s, double* C, double* Cs, double* W, double*
    Wu, double* Wv, double* Wuu, double* Wuv, double* Wvv, double&
    dist2) = NULL, double gain = 10000000., int tag = -1,
    DM_flipped_state flipped_state = DM_flip_unknown, SDM_options*
    sdmo = NULL)

```

```

int DM_add_link_cstrn(int& rtn_err, int& tag_shift, DS_dmod*
    dmod1, DS_dmod* dmod2, int domain_flag, DS_pfunc*
    src1_C_pfunc, DS_pfunc* src2_C_pfunc, DS_pfunc* src1_W_pfunc =
    NULL, DS_pfunc* src1_Wn_pfunc = NULL, DS_pfunc* src1_Wnn_pfunc
    = NULL, DS_pfunc* src2_W_pfunc = NULL, DS_pfunc* src2_Wn_pfunc
    = NULL, DS_pfunc* src2_Wnn_pfunc = NULL, void* src1_data =
    NULL, void* src2_data = NULL, void(* src_CW_func)(void*
    src_data, double s, double* C, double* Cs, double* W, double*
    Wu, double* Wv, double* Wuw, double* Wuv, double* Wvv, double&
    dist2) = NULL, int behavior = (1 < 4)|(0)|(1 < 10)|(0), double
    tang_gain = 1.0, int tag = -1, SDM_options* sdmo = NULL)

int DM_add_pt_cstrn(int& rtn_err, DS_dmod* dmod, int tag_flag,
    DS_dmod* parent_dmod, int domain_flag, double* dpt, void*
    src_data = NULL, DS_CSTRN_SRC src_type = ds_user_cstrn, int
    behavior =(1 < 3), double* ipt = NULL, double* domain1_dir =
    NULL, double* domain2_dir = NULL, double* tang1_val = NULL,
    double* tang2_val = NULL, double* norm_val = NULL, double*
    binorm_val = NULL, double* curv1_val = NULL, double* curv2_val
    = NULL, int tag = -1, SDM_options* sdmo = NULL)

int DM_add_pt_press(int& rtn_err, DS_dmod* dmod, int tag_flag,
    int domain_flag, double* dpt, double gain = 0.0, int
    negate_flag = 0, int tag = -1, SDM_options* sdmo = NULL)

int DM_add_spring(int& rtn_err, DS_dmod* dmod, int tag_flag, int
    domain_flag, double* dpt, double* ipt = NULL, int ipt_flag =
    0, double gain = 0.0, int tag = -1, SDM_options* sdmo = NULL)

int DM_add_spring_set(int& rtn_err, DS_dmod* dmod, int tag_flag,
    int domain_flag, int pt_count, double* domain_pts, double*
    free_pts = NULL, double gain = 0.0, int tag = -1, SDM_options*
    sdmo = NULL)

int DM_add_surface_patch(int& rtn_err, DS_dmod* dmod, int
    domain_flag, double pt1[], double pt2[], int refinement, void*
    patch_entity, int seam_count, DS_pfunc** seam, void**
    seam_data, SDM_options* sdmo = NULL)

int DM_add_vector_load(int& rtn_err, DS_dmod* dmod, int tag_flag,
    double* image_vec = NULL, double gain = 0.0, int tag = -1,
    SDM_options* sdmo = NULL)

int DM_assign_next_tag(int& rtn_err, DS_dmod* dmod, SDM_options*
    sdmo = NULL)

```

```

void DM_build_ellipse_seam(int& rtn_err, DS_dmod* dmod, int
    domain_flag, double cpt[], double axis1[], double axis2[],
    double min[], double max[], int& pfunc_count, DS_pfunc**&
    pfunc, SDM_options* sdmo = NULL)

void DM_build_fillet_square_seam(int& rtn_err, DS_dmod* dmod, int
    domain_flag, double min[], double max[], double radius, int&
    pfunc_count, DS_pfunc**& pfunc, SDM_options* sdmo = NULL)

void DM_build_square_seam(int& rtn_err, DS_dmod* dmod, int
    domain_flag, double min[], double max[], int& pfunc_count,
    DS_pfunc**& pfunc, SDM_options* sdmo = NULL)

DS_zone* DM_build_square_zone(int& rtn_err, DS_dmod* dmod, int
    domain_flag, double min[], double max[], SDM_options* sdmo =
    NULL)

DS_TAGS DM_classify_tag(int& rtn_err, DS_dmod* dmod, int tag,
    SDM_options* sdmo = NULL)

int DM_convert_loads_and_cstrns(int& rtn_err, DS_dmod* dmod, int
    tag, DM_target_memory flag, SDM_options* sdmo)

DS_dmod* DM_copy_dmod(int& rtn_err, DS_dmod* dmod, int walk_flag
    = 0, SDM_options* sdmo = NULL)

DS_pfunc* DM_copy_pfunc(int& rtn_err, DS_pfunc* pfunc,
    SDM_options* sdmo = NULL)

void DM_delete_dmod(int& rtn_err, DS_dmod*& dmod, SDM_options*
    sdmo = NULL)

void DM_delete_pfunc(int& rtn_err, DS_pfunc*& pfunc, SDM_options*
    sdmo = NULL)

void DM_delete_zone(int& rtn_err, DS_zone*& zone, SDM_options*
    sdmo = NULL)

void DM_draw_icon(int& rtn_err, const DM_icon_draw_args& args,
    DS_dmod* dmod, const int* tags, int ntags, SDM_options* sdmo =
    NULL)

void DM_draw_icon(int& rtn_err, const DM_icon_draw_args& args,
    DS_dmod* dmod, int tag, SDM_options* sdmo = NULL)

void DM_elevate_dmod_degree(int& rtn_err, DS_dmod* dmod, int
    cont_flag, SDM_options* sdmo = NULL)

void DM_eval_crv_src_domain(int& rtn_err, DS_dmod* dmod, int tag,
    const double* s, int npts, DMdbl_array& C, SDM_options* sdmo
    = NULL)

```

```

void DM_eval_crv_tgt(int& rtn_err, DS_dmod* dmod, int tag, const
    double* s, int npts, DM_dbl_array& W, SDM_options* sdmo =
    NULL)

void DM_eval_dmod(int& rtn_err, DS_dmod* dmod, int domain_flag,
    double* dpt, double* W, double* dwu = NULL, double* dwv =
    NULL, double* dwuu = NULL, double* dwuv = NULL, double* dwvv =
    NULL, double* dwuuu = NULL, double* dwuuv = NULL, double*
    dwuvv = NULL, double* dwvvv = NULL, SDM_options* sdmo = NULL)

void DM_eval_pfunc(int& rtn_err, DS_pfunc* pfunc, int
    domain_flag, double* dpt, double* W, double* dwu = NULL,
    double* dwv = NULL, double* dwuu = NULL, double* dwuv = NULL,
    double* dwvv = NULL, double* dwuuu = NULL, double* dwuuv =
    NULL, double* dwuvv = NULL, double* dwvvv = NULL, SDM_options*
    sdmo = NULL)

void DM_extrapolate_dmod(int& rtn_err, DS_dmod* dmod,
    SDM_options* sdmo = NULL)

DS_cstrn* DM_find_cstrn_by_tag(int& rtn_err, DS_dmod* dmod, int
    tag, int& patch_tag1, int& patch_tag2, SDM_options* sdmo =
    NULL)

DS_load* DM_find_load_by_tag(int& rtn_err, DS_dmod* dmod, int
    tag, int& patch_tag, SDM_options* sdmo = NULL)

DS_dmod* DM_find_patch_by_entity(int& rtn_err, DS_dmod* dmod,
    void* entity, SDM_options* sdmo = NULL)

DS_dmod* DM_find_patch_by_tag(int& rtn_err, DS_dmod* dmod, int
    tag, SDM_options* sdmo = NULL)

DS_dmod* DM_find_patch_by_tag_flag(int& rtn_err, DS_dmod* dmod,
    int tag_flag, int& walk_flag, SDM_options* sdmo = NULL)

int DM_find_tag_by_image_line(int& rtn_err, DS_dmod* dmod,
    double* p0, double* p1, double max_dist, int& pt_index,
    SDM_options* sdmo = NULL)

DS_dmod* DM_get_active_patch(int& rtn_err, DS_dmod* dmod,
    SDM_options* sdmo = NULL)

int DM_get_active_patch_tag(int& rtn_err, DS_dmod* dmod,
    SDM_options* sdmo = NULL)

void DM_get_alpha(int& rtn_err, DS_dmod* dmod, double* alpha,
    SDM_options* sdmo = NULL)

```

```

int DM_get_area_cstrn_flag(int& rtn_err, DS_dmod* dmod, int tag,
    SDM_options* sdmo = NULL)

void DM_get_attractor(int& rtn_err, DS_dmod* dmod, int tag,
    double* image_pt, int& power, double& gain, SDM_options* sdmo
    = NULL)

void DM_get_beta(int& rtn_err, DS_dmod* dmod, double* beta,
    SDM_options* sdmo = NULL)

void DM_get_bspline_curve(int& rtn_err, DS_pfunc* pfunc, int&
    image_dim, int& degree, int& dof_count, int& knot_count, int*&
    knot_index, double*& knot, double*& dof_vec, double*& dof_def,
    int& end_cond, int& ntgrl_degree, SDM_options* sdmo = NULL)

void DM_get_bspline_surface(int& rtn_err, DS_pfunc* pfunc, int&
    image_dim, int& degree_u, int& dof_count_u, int& knot_count_u,
    int*& knot_index_u, double*& knot_u, int& degree_v, int&
    dof_count_v, int& knot_count_v, int*& knot_index_v, double*&
    knot_v, double*& dof_vec, double*& dof_def, int& end_cond_u,
    int& singular_u, int& end_cond_v, int& singular_v, int&
    ntgrl_degree, SDM_options* sdmo = NULL)

DS_dmod* DM_get_child(int& rtn_err, DS_dmod* dmod, SDM_options*
    sdmo = NULL)

void DM_get_circ_curve(int& rtn_err, DS_pfunc* pfunc, int&
    image_dim, double*& dof_vec, double*& dof_def, int&
    elem_count, int& ntgrl_degree, SDM_options* sdmo = NULL)

void DM_get_comb_graphics(int& rtn_err, DS_dmod* dmod, int&
    comb_pt_count, double& comb_gain, SDM_options* sdmo = NULL)

void DM_get_cstrn(int& rtn_err, DS_dmod* dmod, int tag, DS_TAGS&
    type_id, DS_CSTRN_SRC& src_type, int& patch1_tag, int&
    patch2_tag, char* shape1, char* shape2, int& behavior, int&
    state, int& rights, void*& src1_data, void*& src2_data, int
    domain_flag, int& uv1_pts_count, int& uv2_pts_count, double
    uv1_pts[], double uv2_pts[], double& tang_gain, int&
    ntgrl_degree, SDM_options* sdmo = NULL)

int DM_get_cstrn_behavior(int& rtn_err, DS_dmod* dmod, int tag,
    SDM_options* sdmo = NULL)

int DM_get_cstrn_rights(int& rtn_err, DS_dmod* dmod, int tag,
    SDM_options* sdmo = NULL)

void* DM_get_cstrn_src_data(int& rtn_err, DS_dmod* dmod, int tag,
    int tgt = 1, SDM_options* sdmo = NULL)

```

```

void DM_get_cstrn_src_pfuncs(int& rtn_err, DS_dmod* dmod, int
    tag, int tgt, DS_pfunc*& src_W_pfunc, DS_pfunc*& src_Wn_pfunc,
    DS_pfunc*& src_Wnn_pfunc, SDM_options* sdmo = NULL)

int DM_get_cstrn_state(int& rtn_err, DS_dmod* dmod, int tag,
    SDM_options* sdmo = NULL)

void DM_get_cstrn_type_id(int& rtn_err, DS_dmod* dmod, int tag,
    DS_TAGS& type_id, DS_CSTRN_SRC& src_type, SDM_options* sdmo =
    NULL)

void DM_get_cstrn_value(int& rtn_err, DS_dmod* dmod, int tag, int
    pt_index, int& cstrn_val_count, double*& cstrn_val,
    SDM_options* sdmo = NULL)

void DM_get_curve_load(int& rtn_err, DS_dmod* dmod, int tag,
    DS_pfunc*& src_C_pfunc, DS_pfunc*& src_W_pfunc, double& gain,
    SDM_options* sdmo = NULL)

int DM_get_default_shape(int& rtn_err, DS_dmod* dmod,
    SDM_options* sdmo = NULL)

double DM_get_delta(int& rtn_err, DS_dmod* dmod, SDM_options*
    sdmo = NULL)

void DM_get_dist_press(int& rtn_err, DS_dmod* dmod, int tag, int
    domain_flag, double* domain_min, double* domain_max, double&
    gain, int& negate_flag, SDM_options* sdmo = NULL)

void DM_get_dmods(int& rtn_err, DS_dmod* dmod, int& ntags,
    DM_tag_array& tags, SDM_options* sdmo = NULL)

DS_cstrn* DM_get_dmod_cstrn(int& rtn_err, DS_dmod* dmod,
    SDM_options* sdmo = NULL)

void DM_get_dmod_curve(int& rtn_err, DS_dmod* dmod, double&
    domain_scale, DS_pfunc*& pfunc, void*& dmod_entity, int&
    draw_state, int& tag, double& alpha, double& beta, double&
    gamma, double& delta, double& dt, double& mass, double& damp,
    DS_dmod*& parent, DS_dmod*& sibling, DS_dmod*& child, int&
    load_count, int& cstrn_count, SDM_options* sdmo = NULL)

void DM_get_dmod_degree(int& rtn_err, DS_dmod* dmod, int&
    u_degree, int& v_degree, SDM_options* sdmo = NULL)

void DM_get_dmod_domain_max(int& rtn_err, DS_dmod* dmod, int
    domain_flag, double* domain_max, SDM_options* sdmo = NULL)

void DM_get_dmod_domain_min(int& rtn_err, DS_dmod* dmod, int
    domain_flag, double* domain_min, SDM_options* sdmo = NULL)

```

```

double DM_get_dmod_domain_scale(int& rtn_err, DS_dmod* dmod,
    SDM_options* sdmo)

void DM_get_dmod_knots(int& rtn_err, DS_dmod* dmod, int&
    u_knot_count, double*& u_knot, int& v_knot_count, double*&
    v_knot, SDM_options* sdmo = NULL)

DS_load* DM_get_dmod_load(int& rtn_err, DS_dmod* dmod,
    SDM_options* sdmo = NULL)

DS_pfunc* DM_get_dmod_pfunc(int& rtn_err, DS_dmod* dmod,
    SDM_options* sdmo = NULL)

void DM_get_dmod_surface(int& rtn_err, DS_dmod* dmod, void*&
    dmod_entity, double& domain_scale, DS_pfunc*& pfunc, int&
    draw_state, int& tag, double& au, double& av, double& atheta,
    double& bu, double& bv, double& btheta, double& gamma, double&
    delta, double& dt, double& mass, double& damp, DS_dmod*&
    parent, DS_dmod*& sibling, DS_dmod*& child, int& load_count,
    int& cstrn_count, SDM_options* sdmo = NULL)

int DM_get_dmod_tag(int& rtn_err, DS_dmod* dmod, SDM_options*
    sdmo = NULL)

void DM_get_dmod_tags(int& rtn_err, DS_dmod* dmod, int& ntags,
    DM_tag_array& tags, SDM_options* sdmo = NULL)

DS_TAGS DM_get_dmod_type_id(int& rtn_err, DS_dmod* dmod,
    SDM_options* sdmo = NULL)

void DM_get_dof_state(int& rtn_err, DS_dmod* dmod, int&
    dof_count, int& free_count, int& cstrn_count, int&
    fixed_count, int& lambda_count, int& lfixed_count,
    SDM_options* sdmo = NULL)

int DM_get_domain_dim(int& rtn_err, DS_dmod* dmod, SDM_options*
    sdmo = NULL)

void DM_get_draw_count(int& rtn_err, DS_dmod* dmod, int&
    handle_count, int& shape_count, int walk_flag = 0,
    SDM_options* sdmo = NULL)

int DM_get_draw_state(int& rtn_err, DS_dmod* dmod, SDM_options*
    sdmo = NULL)

void DM_get_dynamics(int& rtn_err, DS_dmod* dmod, double& dt,
    double& mass, double& damp, SDM_options* sdmo = NULL)

void DM_get_elem_count(int& rtn_err, DS_dmod* dmod, int&
    elem_count, int& u_span_count, int& v_span_count, SDM_options*
    sdmo = NULL)

```

```

void DM_get_end_conds(int& rtn_err, DS_dmod* dmod, int&
    end_cond_u, int& singular_u, int& end_cond_v, int& singular_v,
    SDM_options* sdmo = NULL)

void* DM_get_entity(int& rtn_err, DS_dmod* dmod, SDM_options*
    sdmo = NULL)

void DM_get_epsilon(int& rtn_err, const DS_dmod* dmod, int tag,
    double& eps, SDM_options* sdmo = NULL)

double DM_get_gamma(int& rtn_err, DS_dmod* dmod, SDM_options*
    sdmo = NULL)

DM_Icon* DM_get_icon(int& rtn_err, DS_dmod* dmod, int tag,
    SDM_options* sdmo = NULL)

int DM_get_image_dim(int& rtn_err, DS_dmod* dmod, SDM_options*
    sdmo = NULL)

int DM_get_integral_degree(int& rtn_err, DS_dmod* dmod,
    SDM_options* sdmo = NULL)

int DM_get_interior_state(int& rtn_err, DS_dmod* dmod,
    SDM_options* sdmo = NULL)

double DM_get_load_gain(int& rtn_err, DS_dmod* dmod, int tag,
    SDM_options* sdmo = NULL)

DS_TAGS DM_get_load_type_id(int& rtn_err, DS_dmod* dmod, int tag,
    SDM_options* sdmo = NULL)

void DM_get_mesh_count(int& rtn_err, DS_dmod* dmod, int& mesh_u,
    int& mesh_v, SDM_options* sdmo = NULL)

void DM_get_nurb_curve(int& rtn_err, DS_pfunc* pfunc, int&
    image_dim, int& degree, int& dof_count, int& knot_count, int*&
    knot_index, double*& knot, double*& dof_vec, double*& dof_def,
    double*& weight, int& end_cond, int& ntgrl_degree,
    SDM_options* sdmo = NULL)

void DM_get_nurb_surface(int& rtn_err, DS_pfunc* pfunc, int&
    image_dim, int& degree_u, int& dof_count_u, int& knot_count_u,
    int*& knot_index_u, double*& knot_u, int& degree_v, int&
    dof_count_v, int& knot_count_v, int*& knot_index_v, double*&
    knot_v, double*& dof_vec, double*& dof_def, double*& weight,
    int& end_cond_u, int& singular_u, int& end_cond_v, int&
    singular_v, int& ntgrl_degree, SDM_options* sdmo = NULL)

DS_dmod* DM_get_parent(int& rtn_err, DS_dmod* dmod, SDM_options*
    sdmo = NULL)

```

```

int DM_get_patch_continuity(int& rtn_err, DS_dmod* dmod,
    SDM_options* sdmo = NULL)

int DM_get_patch_seam_count(int& rtn_err, DS_dmod* dmod,
    SDM_options* sdmo = NULL)

int DM_get_patch_seam_tag(int& rtn_err, DS_dmod* dmod, int
    seam_number, SDM_options* sdmo = NULL)

int DM_get_pfunc_default_state(int& rtn_err, DS_pfunc* pfunc,
    SDM_options* sdmo = NULL)

void DM_get_pfunc_degrees(int& rtn_err, DS_pfunc* pfunc, DS_PFN&
    type_id, int& degree_u, int& degree_v, SDM_options* sdmo =
    NULL)

void DM_get_pfunc_dofs(int& rtn_err, DS_pfunc* pfunc, DS_PFN&
    type_id, int& image_dim, int& dof_count_u, int& dof_count_v,
    double*& dof_vec, double*& dof_def, double*& weight,
    SDM_options* sdmo = NULL)

int DM_get_pfunc_dof_count(int& rtn_err, DS_pfunc* pfunc,
    SDM_options* sdmo = NULL)

int DM_get_pfunc_domain_dim(int& rtn_err, DS_pfunc* pfunc,
    SDM_options* sdmo = NULL)

void DM_get_pfunc_domain_max(int& rtn_err, DS_pfunc* pfunc, int
    domain_flag, double* domain_max, SDM_options* sdmo = NULL)

void DM_get_pfunc_domain_min(int& rtn_err, DS_pfunc* pfunc, int
    domain_flag, double* domain_min, SDM_options* sdmo = NULL)

int DM_get_pfunc_elem_count(int& rtn_err, DS_pfunc* pfunc,
    SDM_options* sdmo = NULL)

int DM_get_pfunc_image_dim(int& rtn_err, DS_pfunc* pfunc,
    SDM_options* sdmo = NULL)

void DM_get_pfunc_knots(int& rtn_err, DS_pfunc* pfunc, DS_PFN&
    type_id, int& u_knot_count, int& v_knot_count, double*&
    u_knots, int*& u_index, double*& v_knots, int*& v_index,
    SDM_options* sdmo = NULL)

void DM_get_pfunc_knot_counts(int& rtn_err, DS_pfunc* pfunc, int&
    knot_count_u, int& knot_count_v, SDM_options* sdmo = NULL)

DS_PFN DM_get_pfunc_type_id(int& rtn_err, DS_pfunc* pfunc,
    SDM_options* sdmo = NULL)

```

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void DM_get_pt_press(int& rtn_err, DS_dmod* dmod, int tag, int
    domain_flag, double* dpt, double& gain, int& negate_flag,
    SDM_options* sdmo = NULL)

void DM_get_pt_uv(int& rtn_err, DS_dmod* dmod, int tag, int
    domain_flag, double* dpt, DS_TAGS& type, SDM_options* sdmo =
    NULL)

void DM_get_pt_xyz(int& rtn_err, DS_dmod* dmod, int tag, int
    pt_index, double* p0, DS_TAGS& type, SDM_options* sdmo = NULL)

DS_dmod* DM_get_sibling(int& rtn_err, DS_dmod* dmod, SDM_options*
    sdmo = NULL)

void DM_get_sibling_list(int& rtn_err, DS_dmod* dmod, int&
    sibling_count, int*& sibling_list, SDM_options* sdmo = NULL)

void DM_get_spring(int& rtn_err, DS_dmod* dmod, int tag, int
    domain_flag, double* dpt, double* free_pt, double* base_pt,
    double& gain, SDM_options* sdmo = NULL)

double DM_get_spring_length(int& rtn_err, DS_dmod* dmod, int tag,
    SDM_options* sdmo = NULL)

void DM_get_spring_set(int& rtn_err, DS_dmod* dmod, int tag, int
    domain_flag, int& pt_count, double*& domain_pts, double*&
    free_pts, double*& base_pts, double& gain, SDM_options* sdmo =
    NULL)

void DM_get_tags(int& rtn_err, DS_dmod* dmod, int& ntags,
    DM_tag_array& tags, SDM_options* sdmo = NULL)

int DM_get_tag_count(int& rtn_err, DS_dmod* dmod, SDM_options*
    sdmo = NULL)

void DM_get_tag_summary(int& rtn_err, DS_dmod* dmod, int&
    tag_count, int*& tag_summary, SDM_options* sdmo = NULL)

double DM_get_tan_display_gain(int& rtn_err, DS_dmod* dmod,
    SDM_options* sdmo = NULL)

int DM_get_tight_state(int& rtn_err, DS_dmod* dmod, int tag,
    SDM_options* sdmo = NULL)

void DM_get_tolerance(int& rtn_err, double& dist_tol, double&
    ang_tol, SDM_options* sdmo = NULL)

void DM_get_vector_load(int& rtn_err, DS_dmod* dmod, int tag,
    double* image_vec, double& gain, SDM_options* sdmo = NULL)

```

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void DM_journal_off(int& rtn_err, SDM_options* sdmo = NULL)

void DM_journal_on(int& rtn_err, char* file_name, int cascade =
    0, SDM_options* sdmo = NULL)

void DM_journal_play(int& rtn_err, char* file_name, SDM_options*
    sdmo = NULL)

DS_pfunc* DM_make_bspline_curve(int& rtn_err, int image_dim, int
    degree, int dof_count, int knot_count, int* knot_index,
    double* knot, double* dof_vec, double* dof_def, int end_cond =
    0, SDM_options* sdmo = NULL)

DS_pfunc* DM_make_bspline_surface(int& rtn_err, int image_dim,
    int degree_u, int dof_count_u, int knot_count_u, int*
    knot_index_u, double* knot_u, int degree_v, int dof_count_v,
    int knot_count_v, int* knot_index_v, double* knot_v, double*
    dof_vec, double* dof_def, int end_cond_u = 0, int singular_u =
    0, int end_cond_v = 0, int singular_v = 0, SDM_options* sdmo =
    NULL)

DS_pfunc* DM_make_circ_curve(int& rtn_err, int image_dim, double*
    dof_vec, double u_min, double u_max, SDM_options* sdmo)

DS_pfunc* DM_make_dcurve_image(int& rtn_err, int domain_flag,
    double domain_scale, DS_pfunc* dcurve, DS_pfunc* surface,
    double tolerance, SDM_options* sdmo = NULL)

DS_dmod* DM_make_dmod_curve(int& rtn_err, DS_pfunc* pfunc, void*
    dmod_entity = NULL, int draw_state =(1 < 1)|(1 < 2)|(1 < 3),
    int tag = 2, double alpha = 1.0, double beta = 5.0, double
    gamma = 0.0, double delta = 0.0, double dt = 1.0, double mass
    = 0.0, double damp = 0.0, SDM_options* sdmo = NULL)

DS_dmod* DM_make_dmod_surface(int& rtn_err, DS_pfunc* pfunc,
    void* dmod_entity = NULL, int draw_state =(1 < 1)|(1 < 2)|(1 <
    3), int tag = 2, double au = 1.0, double av = 1.0, double
    atheta = 0.0, double bu = 5.0, double bv = 5.0, double btheta
    = 0.0, double gamma = 0.0, double delta = 0.0, double dt =
    1.0, double mass = 0.0, double damp = 0.0, SDM_options* sdmo =
    NULL)

DS_pfunc* DM_make_nurb_curve(int& rtn_err, int image_dim, int
    degree, int dof_count, int knot_count, int* knot_index,
    double* knot, double* dof_vec, double* dof_def, double*
    weight, int end_cond = 0, SDM_options* sdmo = NULL)

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DS_pfunc* DM_make_nurb_surface(int& rtn_err, int image_dim, int
    degree_u, int dof_count_u, int knot_count_u, int*
    knot_index_u, double* knot_u, int degree_v, int dof_count_v,
    int knot_count_v, int* knot_index_v, double* knot_v, double*
    dof_vec, double* dof_def, double* weight, int end_cond_u = 0,
    int singular_u = 0, int end_cond_v = 0, int singular_v = 0,
    SDM_options* sdmo = NULL)

DS_pfunc* DM_make_orig_dmod_space_pfunc(int& rtn_err, DS_dmod*
    dmod, SDM_options* sdmo = NULL)

void DM_param_max(int& rtn_err, DS_dmod* dmod, int tag,
    DM_dbl_array& s_arr, SDM_options* sdmo = NULL)

void DM_param_min(int& rtn_err, DS_dmod* dmod, int tag,
    DM_dbl_array& s_arr, SDM_options* sdmo = NULL)

DS_dmod* DM_parse_tag_flag(int& rtn_err, DS_dmod* dmod, int
    tag_flag, int& walk_flag, SDM_options* sdmo = NULL)

void DM_print_dmod(int& rtn_err, DS_dmod* dmod, FILE* file, int
    walk_flag = 0, SDM_options* sdmo = NULL)

void DM_print_dmod_cstrns(int& rtn_err, DS_dmod* dmod, FILE*
    file, SDM_options* sdmo = NULL)

void DM_query_icon(int& rtn_err, DM_icon_query_args& args,
    DS_dmod* dmod, int tag, SDM_options* sdmo = NULL)

void DM_refine_dmod_fit(int& rtn_err, DS_dmod* dmod, double
    err_size, double& residual, double& beg_crv_dist_err, double&
    end_crv_dist_err, double& max_dist_moved, int walk_flag = 0,
    SDM_options* sdmo = NULL)

void DM_rm_patch(int& rtn_err, DS_dmod* dmod, int tag_flag,
    SDM_options* sdmo = NULL)

DS_TAGS DM_rm_tag_object(int& rtn_err, DS_dmod* dmod, int tag,
    DS_dmod*& detached_dmod, int deletable_flag = 1, SDM_options*
    sdmo = NULL)

void DM_scale_pfunc_image(int& rtn_err, DS_pfunc* pfunc, double
    scale, SDM_options* sdmo = NULL)

void DM_scale_unit_dpt_array_from_dmod(int& rtn_err, DS_dmod*
    dmod, int domain_dim, int pt_count, double* dpt, SDM_options*
    sdmo = NULL)

void DM_scale_unit_dpt_array_from_pfunc(int& rtn_err, DS_pfunc*
    pfunc, int domain_dim, int pt_count, double* dpt, SDM_options*
    sdmo = NULL)

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void DM_scale_unit_dpt_array_to_dmod(int& rtn_err, DS_dmod* dmod,
    int domain_dim, int pt_count, double* dpt, SDM_options* sdmo =
    NULL)

void DM_scale_unit_dpt_array_to_pfunc(int& rtn_err, DS_pfunc*
    pfunc, int domain_dim, int pt_count, double* dpt, SDM_options*
    sdmo = NULL)

void DM_scale_unit_dpt_from_dmod(int& rtn_err, DS_dmod* dmod, int
    domain_dim, double* uv, SDM_options* sdmo = NULL)

void DM_scale_unit_dpt_from_pfunc(int& rtn_err, DS_pfunc* pfunc,
    int domain_dim, double* uv, SDM_options* sdmo = NULL)

void DM_scale_unit_dpt_to_dmod(int& rtn_err, DS_dmod* dmod, int
    domain_dim, double* uv, SDM_options* sdmo = NULL)

void DM_scale_unit_dpt_to_pfunc(int& rtn_err, DS_pfunc* pfunc,
    int domain_dim, double* uv, SDM_options* sdmo = NULL)

void DM_scale_unit_dvec_to_dmod(int& rtn_err, DS_dmod* dmod, int
    domain_dim, double* duv, SDM_options* sdmo = NULL)

void DM_scale_unit_dvec_to_pfunc(int& rtn_err, DS_pfunc* pfunc,
    int domain_dim, double* duv, SDM_options* sdmo = NULL)

void DM_setstate_icon(int& rtn_err, const DM_icon_cmd_args& args,
    DS_dmod* dmod, const int* tags, int ntags, SDM_options* sdmo =
    NULL)

void DM_setstate_icon(int& rtn_err, const DM_icon_cmd_args& args,
    DS_dmod* dmod, int tag, SDM_options* sdmo = NULL)

void DM_set_active_patch(int& rtn_err, DS_dmod* dmod,
    SDM_options* sdmo = NULL)

void DM_set_alpha(int& rtn_err, DS_dmod* dmod, double* alpha, int
    walk_flag = 0, SDM_options* sdmo = NULL)

void DM_set_area_cstrn_flag(int& rtn_err, DS_dmod* dmod, int tag,
    int zone_flag, SDM_options* sdmo = NULL)

void DM_set_array_size(int& rtn_err, DM_dbl_array& arr, int
    new_size, double init_val = 0.0, SDM_options* sdmo = NULL)

void DM_set_attractor_power(int& rtn_err, DS_dmod* dmod, int tag,
    int power = 2, SDM_options* sdmo = NULL)

void DM_set_beta(int& rtn_err, DS_dmod* dmod, double* beta, int
    walk_flag = 0, SDM_options* sdmo = NULL)

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int DM_set_comb_graphics(int& rtn_err, DS_dmod* dmod, int
    comb_pt_count, double comb_gain, int walk_flag = 0,
    SDM_options* sdmo = NULL)

void DM_set_cstrn_behavior(int& rtn_err, DS_dmod* dmod, int tag,
    int behavior, SDM_options* sdmo = NULL)

void DM_set_cstrn_pttan_uv_dir(int& rtn_err, DS_dmod* dmod, int
    tag, double* domain_dir, int which_dir, SDM_options* sdmo =
    NULL)

void DM_set_cstrn_src_data(int& rtn_err, DS_dmod* dmod, int tag,
    int tgt = 1, void* src_data = NULL, SDM_options* sdmo = NULL)

void DM_set_cstrn_src_pfuncs(int& rtn_err, DS_dmod* dmod, int
    tag, int tgt, DS_pfunc* src_W_pfunc, DS_pfunc* src_Wn_pfunc,
    DS_pfunc* src_Wnn_pfunc, SDM_options* sdmo = NULL)

void DM_set_cstrn_state(int& rtn_err, DS_dmod* dmod, int tag, int
    state_flag, SDM_options* sdmo = NULL)

void DM_set_cstrn_value(int& rtn_err, DS_dmod* dmod, int tag, int
    pt_index, int cstrn_val_count, double* cstrn_val, SDM_options*
    sdmo = NULL)

void DM_set_default_shape(int& rtn_err, DS_dmod* dmod, int
    shape_flag, int walk_flag = 0, SDM_options* sdmo = NULL)

void DM_set_delta(int& rtn_err, DS_dmod* dmod, double delta =
    0.0, int walk_flag = 0, SDM_options* sdmo = NULL)

void DM_set_dmod_tag(int& rtn_err, DS_dmod* dmod, int tag,
    SDM_options* sdmo = NULL)

int DM_set_draw_state(int& rtn_err, DS_dmod* dmod, int
    draw_state, int walk_flag = 0, SDM_options* sdmo = NULL)

void DM_set_dynamics(int& rtn_err, DS_dmod* dmod, double dt =
    1.0, double mass = 1.0, double damp = 5.0, int walk_flag = 0,
    SDM_options* sdmo = NULL)

void DM_set_end_conds(int& rtn_err, DS_dmod* dmod, int
    end_cond_u, int singular_u, int end_cond_v, int singular_v,
    SDM_options* sdmo = NULL)

void DM_set_entity(int& rtn_err, DS_dmod* dmod, void* entity,
    SDM_options* sdmo = NULL)

void DM_set_epsilon(int& rtn_err, DS_dmod* dmod, int tag, double
    eps, SDM_options* sdmo = NULL)

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void DM_set_gamma(int& rtn_err, DS_dmod* dmod, double gamma =
    0.0, int walk_flag = 0, SDM_options* sdmo = NULL)

void DM_set_icon(int& rtn_err, DS_dmod* dmod, int tag, DM_icon*
    dmicon, SDM_options* sdmo = NULL)

void DM_set_icon_owner(int& rtn_err, DS_dmod* dmod, const int*
    tags, int ntags, SDM_options* sdmo = NULL)

void DM_set_icon_owner(int& rtn_err, DS_dmod* dmod, int tag,
    SDM_options* sdmo = NULL)

void DM_set_interior_state(int& rtn_err, DS_dmod* dmod, int
    interior_state, int walk_flag, SDM_options* sdmo = NULL)

void DM_set_load_gain(int& rtn_err, DS_dmod* dmod, DS_TAGS& type,
    int tag, double gain, int group_flag = 0, int inc_flag = 0,
    SDM_options* sdmo = NULL)

int DM_set_mesh_count(int& rtn_err, DS_dmod* dmod, int mesh_u,
    int mesh_v, int walk_flag = 0, SDM_options* sdmo = NULL)

void DM_set_patch_continuity(int& rtn_err, DS_dmod* dmod, int
    continuity, SDM_options* sdmo = NULL)

void DM_set_pfunc_default_state(int& rtn_err, DS_pfunc* pfunc,
    int default_state, SDM_options* sdmo = NULL)

DS_TAGS DM_set_pt_uv(int& rtn_err, DS_dmod* dmod, int tag, int
    domain_flag, double* dpt, SDM_options* sdmo = NULL)

DS_TAGS DM_set_pt_xyz(int& rtn_err, DS_dmod* dmod, int tag, int
    pt_index, double* p0, double* p1, int dir_flag, int
    cascade_flag = 1, int curvature_sign = 0, SDM_options* sdmo =
    NULL)

void DM_set_tag_count(int& rtn_err, DS_dmod* dmod, int tag_count,
    SDM_options* sdmo = NULL)

void DM_set_tan_display_gain(int& rtn_err, DS_dmod* dmod, double
    tan_display_gain = 1.0, int walk_flag = 0, SDM_options* sdmo =
    NULL)

void DM_set_tight_state(int& rtn_err, DS_dmod* dmod, int tag, int
    state_flag, SDM_options* sdmo = NULL)

void DM_set_tolerance(int& rtn_err, double dist_tol, double
    ang_tol, SDM_options* sdmo = NULL)

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void DM_solve(int& rtn_err, DS_dmod* dmod, int iter_count = 1,
    double max_move = 0.0, SDM_options* sdmo = NULL)

void DM_split_dmod(int& rtn_err, DS_dmod* dmod, int domain_flag,
    int split_pt_count, double* split_pts, SDM_options* sdmo =
    NULL)

void DM_update_cstrn_src_pts(int& rtn_err, DS_dmod* dmod, int
    tag, SDM_options* sdmo = NULL)

void DM_xsect_dmod_by_image_line(int& rtn_err, DS_dmod* dmod, int
    walk_flag, double* p0, double* p1, double max_dist, double&
    image_line_u, int domain_flag, double* domain_pt, double*
    image_pt, SDM_options* sdmo = NULL)

```